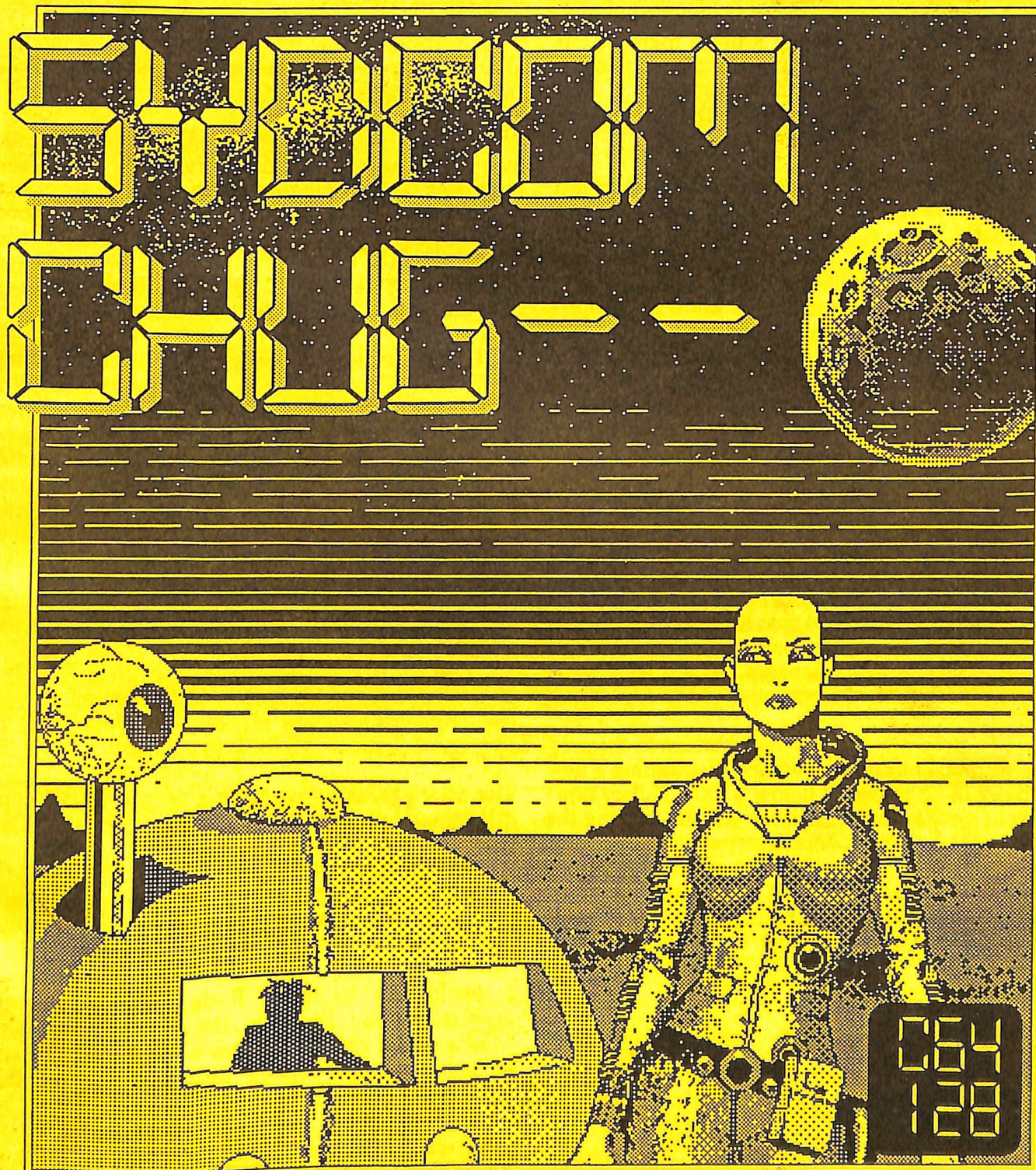


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PERIPHERAL

FOR COMMODORE 64 AND 128 COMPUTERS



MARCH

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EDITORIAL

SYDCOM'S Presidents Report

This month I have very little to talk about. Peripheral is on time and it will be every month only if we continue to get enough articles together. If you feel like putting a little something back into the club try jotting down a few points on a new program or you might have some tips on using a particular program or device.

It's nice to see SYDCOM being productive at last and we hope to see some good things coming out of it this year.

If there are any complaints about the user groups or Peripheral then write and let us know. We don't know about any problems unless we are told. It's no good complaining or making good suggestions behind our backs. We are only too happy to listen and make amends. There is also an open invitation to any of the committee meetings that are held each month.

Latest news on the Amiga. I've seen the Sidecar running and yes, it is as good as they say it is. It doesn't take up much extra space and a hard drive can be fitted inside the casing. Desktop Publishing software has arrived but it is fairly unsophisticated when compared with the Apple Macintosh.

Chambers has a new manager, Stuart, and he is really excited about the potential of the Annandale store.

It seems that Commodore will be distributing a new PC that will be priced at below \$1000. If they don't a certain well known publisher will be treating the entire staff of Commodore International a glass of the old amber fluid. He also fore sees a cheap laser printer in the works but don't suddenly think you'll be able to produce the results that we can in Peripheral as it will probably be a glorified daisy wheel.

DAVID TIMPERLEY

Dear fellow members,

I was pleased to see you and the family at the last meeting. I was really encouraged by the huge turnout and compliments received at the end.

We had two main speakers. Gordon Wormald gave us a terrific talk of joysticks, trackball, mouse and light pens (see article on Cursor Control, page 8 of this issue). Philip Dean followed with a good demonstration of his 7.5mg hard disk drive and Bulletin Board. The mintie quiz went over well and nobody went to hospital this time from being hit over the head with the tossed minties.

As I mentioned last month, we will be receiving PERIPHERAL every month and unfortunately I haven't seen too many members writing articles. Please be generous with your time, sit down and do a drawing (if you don't have the facility to print your pictures out, we can do that for you) or pass on any comments in your head. What appears only to be of interest to you, might be of great interest to other club members.

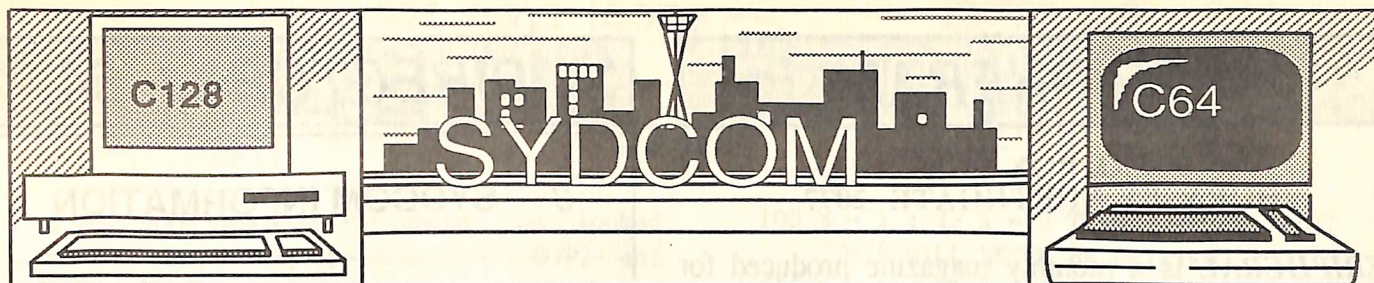
Last meeting we had a show of hands regarding workshops with Geos winning hands down (or up) with 26 promising to come.

Please don't be shy to approach the committee with any problems you are having with your C-64 or 128, because we are all there to help you.

The March meeting we have arranged for a floppy disk expert to give us a talk, plus we hope to run the program you are entering into the competition. Remember there are 3 prizes \$30, \$20 and \$10. Even if your program consists of 2 lines and runs, it could win you a prize. All work must be original and run independently of any other program.

I would like to thank Ryde Catering College, especially John Peacock, the Principal Business Manager and extend a warm welcome to staff and students of this college to attend the monthly meetings.

Armando Amato
SYDCOM President



If you own a Commodore 64 or 128 and would like to meet other users, then SYDCOM is for you. SYDCOM is the largest Commodore User Group in NSW. The advantages of joining it are countless, no matter if you're a first time user or an experienced hacker. You probably noticed that information is the rarest commodity associated with computers. SYDCOM was established to tackle this problem. It provides a focal point for the easy exchange and sharing of knowledge, the club saves everybody time and energy and helps us all get more out of our machines. As we are all users like yourself, you will find realistic and unbiased opinions on most hardware and software products. You will also find other users who have probably faced the very problems you may be having now....

SYDCOM'S activities include:-

- * INFORMATIVE MONTHLY MEETING, 2nd WEDNESDAY EACH MONTH
- * MONTHLY MAGAZINE CONTAINING NEWS, REVIEWS TIPS AND MORE!
- * GROWING PUBLIC DOMAIN SOFTWARE LIBRARY
- * GROWING MAGAZINE AND BOOK LIBRARY
- * DISCOUNTS AT SELECTED STORES
- * MONTHLY WORKSHOPS, 3rd FRIDAY EACH MONTH (except Public Holidays)

The monthly meeting and workshops are held at the **RYDE CATERING COLLEGE**
BLAXLAND ROAD, RYDE NSW
 (opposite Kulgoa Avenue)

Meeting and workshops commence at 7.15pm. Visitors are welcome. Enquiries can be made by writing to The Secretary, G.P.O. Box 1542, Sydney 2001 or by phoning the Secretary, Barry on (02) 521 8765 (A.H.) or Omar on (02) 231-1111 (B.H.).

Membership is \$20.00 per year plus a once only joining fee of \$10.00. You can join at any meeting or by posting the form below to The Secretary, SYDCOM. Please make cheques payable to SYDCOM.

APPLICATION FORM

I am applying for ☐ Membership ☐ Renewal of membership

Name

Address

.....

Post Code Phone.....

Age: ☐ under 18

☐ 19 - 35

☐ 36 - 60

☐ over 60

Equipment owned

Commodore 64 ☐

Commodore 128 ☐

Disk drive ☐

Other computer

Printer Type

Modem Type

Other equipment

Interests

BBS/Viatel ☐

Machine language ☐

Advanced basic ☐

Basic programming ☐

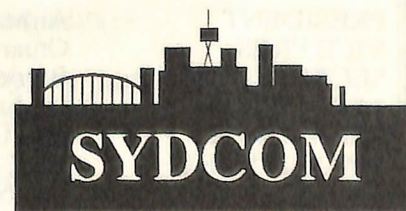
Other languages ☐

Arcade games ☐

Adventure games ☐

Business ☐

Others



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PERIPHERAL

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PERIPHERAL is a monthly magazine produced for SYDCOM and CHUG and is distributed to nearly 300 users throughout Australia and New Zealand. All articles are contributed by club members and computer enthusiasts.

The opinions expressed within this magazine are not necessarily those of the committee or the editor.

The editor would appreciate if all articles are
Sent via modem to Jill on (02) 476 4391

Presented on disk using EasyScript or SuperScript
Disks are to be clearly marked with your Name, Address & Phone No. so the disk can be returned to you at a later meeting.

Typed or clearly written. The first two options are preferred as it takes some time to put the magazine together and it takes a lot longer if articles have to be retyped.

Please leave out all formatting commands and escape codes. Eg. Underlining, bold print, page breaks etc. If any special effect or formatting is required please add a paragraph at the beginning of the text explaining the requirements.

All care is taken but the editor and staff will not be held responsible for any errors or omissions in articles or advertisements published in this magazine.

Any correspondence, articles or advertisements can be addressed to The Editor at the above address.

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Basic Banter

10 for next loops
20 GET A\$
30 GOSUB If then RETURN Print

In the last issue of Peripheral we looked at the branching instructions GOTO and GOSUB. This time we are going to look at "Conditional Operations" that go hand in hand with branching. As we said last time, you could not write any sort of program without conditional operations and branching instructions.

CONDITIONAL OPERATION - IF...THEN...

Computers operate in an entirely logical way. This logic includes conditional operations such as:-

If A = 1 then such and such should happen.

If A = 2 then something else should happen.

To do these sorts of things we have the keywords, IF and THEN.

SYNTAX IF expression THEN action

EXAMPLES IF XA = 1 THEN Y = 10
IF A\$ = "YES" THEN GOTO 10

The way it works is that when the computer's operating system comes across an IF command, it evaluates the "expression" that follows it. If it is true, then the program execution proceeds to the "action" following the THEN. If the "expression" is false, then the program execution ignores the "action" following the THEN and drops down to the next line number.

It is possible to have more than one "action" after the THEN, eg:-

IF C\$ = "NO" THEN E = 2 : GOTO 100

It is important to note that EVERYTHING after the THEN in the same program line is ignored if the "expression" is false. This means that any instructions that appear after the "action", separated from it by a colon, will only be executed if the "expression" is true. This can be illustrated by the following:-

```
100 X = 1 : IF X = 2 THEN Y = 2 : PRINT
    "THIS WILL NEVER BE PRINTED"
110 X = 1 : IF X = 1 THEN Y = 1 : PRINT
    "THIS WILL BE PRINTED"
```

As an example of IF...THEN..., enter and run the following:-

```
1000 REM This line reserved for later
1010 INPUT "ENTER A NUMBER"; N
1100 IF N < 10 THEN PRINT "NUMBER LESS
    THAN 10"
1110 IF N = 10 THEN PRINT "NUMBER EQUAL
    TO 10"
1120 IF N > 10 THEN PRINT "NUMBER GREATER
    THAN 10"
1130 GOTO 1000
```

(Keep this program in memory as we will be using it again in a minute)

The expression to be evaluated can be as simple or as complex as you like. It could, for example, be a formula such as:-

IF X*Y/(A-B) = PEEK(K+P) THEN action

The complexity or length of the "expression" and the "action" is only limited by the fact that all of:-

"IF expression THEN action"

must be in the one program line.

Lets suppose that the following was too much for one line. (It isn't really, but to see how to overcome the problem we will assume it is):-

```
1000 IF A + B > C * D THEN X = Y + Z :
    GOSUB 100 : GOSUB 200 : GOSUB 300
1020 Rest of program
```

This can be replaced with:-

```
1000 IF A + B <= C * D THEN 1020
1010 X = Y + Z : GOSUB 100 : GOSUB 200
    : GOSUB 300
1020 Rest of program
```

In the second case, line 1010 will only be executed if A + B > C * D which is what we wanted in the first case.

Basic Banter

10 for next loops
20 GET A\$
30 GOSUB if then
RETURN Print

You could fit as many lines as you liked between the IF...THEN statement and the rest of the program with this second method. You simply have to ensure that you reverse the condition in the right way.

AND and OR

The "expression" can include more than one condition and/or more than one variable. To do so, however, you need to use AND or OR. For example:-

```
IF A=1 AND B=2 THEN action
IF A=1 OR B=2 THEN action
```

In the first case, BOTH of the conditions (ie A=1 and B=2) must be met to cause the program to follow the THEN path. If one condition is met but not the other, then everything after THEN will be ignored.

In the second case, the "action" after THEN will be carried out if either one or the other or both conditions are met. The "action" after THEN is only ignored if neither of the conditions are met.

Lets go back to the above program for entering and testing a number. In this example, suppose that, when another variable, X, exceeds 50, you want to restrict the value of the number to be entered to within the range 5 and 15. Add the following lines to this program to see how to do this:-

```
1000 INPUT "ENTER A VALUE FOR X"; X
1020 IF X > 50 THEN IF N < 5 OR N > 15
      THEN GOTO 1010
```

If X is not greater than 50, the program goes straight to line 1100 without testing to see what value N holds. However, if N is greater than 50, the second IF...THEN in line 1020 will prevent the program from accepting a value for N outside the range 5 to 15. If such a number is entered, the program branches back to 1010 to get another value of N.

Another shorter way to write line 1020 and achieve the same result would be:-

```
1020 IF X > 50 AND ( N < 5 OR N > 15 )
      THEN 1010
```

Note firstly that we have done away with the double IF..THEN by using AND, and secondly that it is necessary to enclose the "N < 5 OR N > 15" in brackets to ensure that the expression is evaluated in the right order. Also note that:-

IF ... THEN GOTO line number

can be replaced with one of the following:-

```
IF ... THEN line number
IF ... GOTO line number
```

With the program the way it is now, when a number outside the range 5 to 15 is entered, the user would not know why the program branched back to line 1010 without going through lines 1100 to 1130. To make it more user friendly, you could replace line 1020 and add line 1030 as follows:-

```
1020 IF X < 51 OR N > 4 AND N < 16
      THEN 1100
1030 PRINT "NUMBERS MUST BE BETWEEN 5
      AND 15" : GOTO 1010
```

Note that with the original 2 versions of line 1020 we brached BACKWARDS if X was greater than 50 AND the number N was outside the required range, whereas in this last version of 1020 we branch FORWARD if X is less than 51 OR the number N is within the desired range. (Remember that Basic's OR is different to English "or" in that it allows one or the other or both. Think of it as "and/or" in English.)

If you wish to reverse the action being taken like this, you must change not only the conditions (eg change "X>50" to "X<51") but also change any ORs to ANDs and any ANDs to ORs. Note also that changing "X>50" to "X<51" is OK if you are dealing only with whole numbers. If you are dealing with decimals, you would need to change "X>50" to "X<=50".

Having reversed the ANDs and ORs, there is no longer any need for brackets around the "N > 4 AND N < 16".

Basic Banter

It would not matter if they were left in, but if you are unsure whether brackets are necessary or not, it would be best to run a simple test using all possible combinations with and without brackets. This will soon show you whether to use them or not.

If there is an AND and an OR in the same expression, eg:-

```
IF X > 50 AND N < 5 OR N > 15 THEN...
```

the AND will be evaluated first, and if both conditions are not met, ie $X > 50$ and $N < 5$, then the computer ignores the rest of the line. By putting the brackets in the line as follows:-

```
IF X > 50 AND (N < 5 OR N > 15) THEN...
```

the computer is forced to evaluate the items within brackets first, and those outside the brackets second.

NEXT MONTH we will look at the ON command which is similar to IF...THEN, but rather different.

FRANK BUNTON

BASIC WORKSHOP

TO COMMENCE IN
MARCH

BE EARLY AND DON'T
MISS OUT.

SEE DETAILS ON
PAGE 13

PRINTER TEST PROGRAM

If you are thinking of buying a new printer and interface and are totally confused with all that are available. Then try this PRINTER TEST PROGRAM and compare the type styles produced by each one. Also check to see that all the graphic characters and symbols come out correctly. All interfaces do not produce some of the characters correctly. So before you jump in and buy something that will keep you cursing for evermore, try this program first.

```
10 PRINTCHR$(147);"[DOWN][DOWN]PRINTER TESTPROGRAM"
20 PRINT
30 PRINT"CHECK PRINTER IS READY AND HIT ANY KEY"
40 GETA$:ITAS="" THEN GOTO40
100 SP$=" "
110 AS$="0123456789ABCDEF"
120 REM..SA=0..PRINTING IN GRAPHICS MODE
130 OPEN4,4
140 PRINT#4
150 PRINT#4,"PRINTING IN GRAPHICS MODE"
160 PRINT#4
170 GOSUB300
180:
200 REM..SA=7..PRINTING IN BUSINESS MODE
210 OPEN4,4,7
220 AS$="0123456789ABCDEF"
230 PRINT#4
240 PRINT#4,"PRINTING IN BUSINESS MODE"
250 PRINT#4
260 GOSUB300
270 END
280:
300 REM..SUBROUTINE TO PRINT TABLE
310 PRINT#4,SP$,SP$;
320 FORI=0TO15
330 PRINT#4,MID$(AS$,I+1,1);SP$;
340 NEXT I
350 PRINT#4
360 :
370 FORJ=0TO15
380 PRINT#4,MID$(AS$,J+1,1);SP$;
390 PRINT#4,SP$;SP$;SP$;SP$;
400 PRINT#4,CHR$(J+32);SP$;CHR$(J+48);SP$;
410 PRINT#4,CHR$(J+64);SP$;CHR$(J+80);SP$;
420 PRINT#4,CHR$(J+96);SP$;CHR$(J+112);SP$;
430 PRINT#4,SP$;SP$;SP$;SP$;
440 PRINT#4,CHR$(J+160);SP$;CHR$(J+176);SP$;
450 PRINT#4,CHR$(J+192);SP$;CHR$(J+208);SP$;
460 PRINT#4,CHR$(J+224);SP$;CHR$(J+240)
470 NEXTJ
480 FORK+1TO7:PRINT#4:NEXTK
490 CLOSE4
500 RETURN
```

READY.

RON KOENIG



For games or graphics purposes it is often necessary to position a cursor or sprite under user control. A large number of programs use the keyboard for this, but greater convenience is often sought. For this reason, and others, Commodore computers like the C-64 have two games ports which will accept a range of controllers from various manufacturers. Popular forms of control device are the joystick, paddle, trackball, mouse, lightpen or graphics pad.

The port connectors are usually the well-known 'D-type' with 9 male pins; fully allocated for common ground, +5 Volts, X and Y analog signals, 4 directional-switch signals and a "fire" button. The switch and button lines are grounded to activate and the analog signals go to +5V via variable resistors ("pots"). Usually a port employs 2 analog or 4 switch signals (not both simultaneously) except that some analog devices provide not only the normal "fire" button but an auxiliary connected to one of the switch lines. Commodore's propensity for occasional bungling has been evident around these ports, notably in the special C-16 connector which divorced its users from the normal device range and the C128 case design which obstructs port 1 from use by many devices otherwise useable on the C-64.

Joysticks can be operated in 8 directions to operate 1 or 2 of 4 switches or contact sets. They also have another switch actuated by a "fire" button, which is usually situated in the free end of the (vertical) stick. These signals are purely on/off (binary). Numerous varieties of joystick have been sold, some at surprisingly high prices. Each seems to have positive and negative critics (of its action and reliability in particular). An economy version consisting of 5 pushbuttons mounted in a simple "hobby electronics" box is a useful cheap alternative.

One point which has impressed me is the great desirability of anchoring a joystick so that it can be used well with one hand only. (The other is often needed for keyboard or other purposes.) Some come with rubber suckers on the bottom for this reason. Otherwise, an anti-slip mat intended for use in a bath can provide a cheap and plentiful supply of suckers. (Glue a small part of it to the bottom.) Incidentally, slight moistening of their surface with glycerine will improve the effectiveness and extend the life of the suckers.

Paddles originally consisted of two separate rotary pots (for X & Y coordinates) wired to the same port. The first were mounted in separate boxes, later in a common one. The modern ones are more like a joystick but with a mechanical linkage so that the vertical component of stick motion rotates one pot and horizontal the other. Typically the range of stick action can move the cursor over the whole screen.

Positioning can be much faster than for a joystick, but it can also be "fiddley" if precision is required, for instance with hi-res graphics. For this, my software "gears down" if the shift or logo keys are operated, so that 4 or 16 times the stick movement is necessary for horizontal motion on the screen and 2 or 8 times vertically. Anchoring is just as important for paddles as for joysticks. I have found that programming the console space bar for "fire" adds to speed and accuracy of operation.

The C-64 specification calls for paddles of 0-470k ohms, so that its digitiser can translate the position to a byte variable i.e. 0-255. Most paddles seem to have been adapted from other systems or DIY. Their resistance values seldom match the C-64 spec.



To correct this, an excessive value can be shunted by a fixed resistor or a low value by a capacitor to ground. These introduce some non-linearity in the action, but this is usually tolerable.

I use a bimotional paddle obtained from a pre-computer TV-tennis game, modified so that at the flick of a switch it becomes a joystick. A quad op-amp I.C. acts as a set of comparators to sense the pot values and pull down the appropriate joy-line/s whenever the paddle is sufficiently displaced from its central position. An added spring returns it there and a set of 4 (directional indicator) LED's is also useful.

Trackballs are scarce but made by several firms. Mine (by WICO) is quite impressive in its mechanical construction, employing 5 ball-race bearings to allow free rolling (in any direction) of a 50 mm solid plastic ball let into its top surface. The end result of moving the ball is to resolve and transmit the X component of ball motion to a radially slotted disk and Y to another.

Ball movement is detected by LED/photo-cell pairs surrounding the disks and converted by I.C. logic to joystick-type switch signals. Each signal lasts until the ball stops rolling that way. The result is that the user works hard if considerable cursor movement is required. Also, because the ball must get up speed before any signal is generated, control of small movements can be difficult and erratic.

I believe that this excellent mechanism deserves better logic and plan to change mine to output analog signals making it equivalent to a paddle. This will be achievable by counting photocell pulses as the ball rotates, to control a chain of resistors. It should give the ultimate in sensitivity and linearity, with no need for "gear-changing".

Use of the finger-tip instead of the palm of the hand will have an equivalent effect.

It too will be fitted with a switch to change to joystick output, but under positional control instead of the present velocity control. Any movement of more than 5 mm away from where stopped will output its new direction.

Rodents have become a fad. The "mouse" is like an analog trackball turned over to move around on a table and rotate the ball to provide analog output from a pair of pots. Some use other ways of sensing motion and other forms of outputting signal, for instance a series of distance-incrementing pulses like the unprocessed pulses from my track ball's photocells. There are usually 2 or 3 buttons with a click action.

I can't use one; it's too hard to find enough clear table space. Some people are known to love them, although this may be for their fringe benefits - the sophisticated software with which they are sometimes provided.

The lightpen is another story altogether. Consisting of a photocell set in the tip of a probe connected to the port by a 2- or 3-wire cable, it converts light to an electrical signal. Pointed at the computer (monitor) screen, there is a pulse as the raster passes it (50 times per second). This stops a timer (actually a digital clock-pulse counter) which is started with the raster. The KERNAL extracts the timer contents in the form of X and Y bytes, leaving them in two standard memory locations (53267&8 in C-64) for programmed use, typically to position a cursor correspondingly.

I have never seen a really satisfactory lightpen. No matter how the display controls are adjusted, there seems to be enough noise in the system to cause jitter in the X byte.



I rate my 3 as unusable, disadvantaged or annoying respectively. They all have difficulty with some colors, particularly the dark ones (how could black be expected to trigger a pulse?) and near the junction of several areas of unlike colors. A good test is to employ them with one of the proprietary graphics programs to draw a freehand line down the centre of the screen. It usually looks anything from unbelievably bad to erratic.

Graphics pads can sense the location of a stylus or pointer on the surface, employing any of a wide range of physical principles. Some use the stylus to inject current into a conductive surface, processing the voltages at the edges to obtain location signals. Others use a conductive surface and stylus as a sort of 2-dimensional equivalent of the pots in a paddle. Infra-red beams can be interrupted by a stylus and acoustic pulses can be generated by it with timing of their travel to edge-located sensors. The "Koalapad" is the best known of these devices and appears to have a circle of satisfied users.

BACK ISSUES AVAILABLE

JAN / FEB 1986	MAR / APR 1986
MAY / JUNE 1986	SEPT / OCT 1986
NOV / DEC 1986	JAN / FEB 1987

The above back issues are available for purchase at \$1.50 each by writing to **PERIPHERAL** or from **CHUG** or **SYDCOM** meetings.

All back issues are available for loan from the **CHUG** or **SYDCOM** libraries.

A complete set of Basic Banter or Machine Language tutorials or any other articles of interest may be obtained for a small charge by writing to The Editor.

This exposition has avoided technicalities as far as possible. Indeed, it seems that the majority of such devices are used with bought programs requiring no special expertise, other than facile manipulation. The lightpen or graphics pad tend to be packaged for sale with a suite of programs utilising them.

The dedicated programmer can find much of interest in this area. The Commodore-64 User Manual and Programmers Reference Guide provide enough information for tackling tasks like modifying Doodle for control by paddle instead of joystick or the paddle "gearing" mentioned earlier.

GORDON WORMALD

COLOSSAL ADVENTURE

SKILL LEVEL: EXPERT
RATING: 92%

This is the best version you can get of the classic original mainframe adventure game – the one that starts it all! This game has all of the locations included in the original plus 70 extra ones squeezed in! All the original problems are there, from catching a statue bird, lifting a huge block of gold, dropping the precious vase, waving the rod (whoops! free clue) and working out a hard maze! There are lots of treasures to collect and store, there are lots of hidden passages and there are lots of quick deaths. All to make a super and very difficult adventure game. Try it just for the fun of it!

ASYLUM

Whatever you do, don't look up when advised by the maintenance man!

If you'd like a new face, give a stethoscope to a hypochondriac, then turn violent and she'll drop her drugs. Don't leave too many doors open, in fact, closing and locking two rows of ten will pay off. Can anyone find either a magnet or a platinum card in this game?

TELECOMPUTING with your COMMODORE

Telecomputing is an area of computing that not only opens the doors to many new applications for your computer, but also numerous questions. The first and foremost being, 'What is TELECOMPUTING?'. Putting it simply, telecomputing, is effectively computing, over the phone lines. Much of the business world revolves around Telecomputing, as it allows the easy exchange of information between computers, and various networks etc. For example, you can do your banking at any branch of the particular bank no matter where, because the information can be transferred to the central computer at head office. Without telecomputing life would be so much harder.

However Telecomputing is not limited to the business world, your humble Commodore is capable of functioning in the Telecomputing world, in fact it is possible to do Home Banking through your Commodore 64, a modem, and Viatel. You can also leave messages to other people, receive programs or files, check stock market prices, do your shopping over the phone, and many other functions. That leads us to the next question, 'What hardware and software is required to receive the advantages of the Telecomputing World?'. Well you need a piece of hardware known as a MODEM and a you need software, known as a terminal program to run your modem. Once you have these (you may also need an interface to connect the modem to the computer), you are all ready to jump into the huge and growing world of Telecomputing, but more on that later.

What actually is a Modem?

Well the term modem is an abbreviation for MODulator-DEModulator. The modem is used to modulate and demodulate the messages your computer sends and receives. The digital signals produced by the computer have to be Modulated into sounds to be sent along the phone lines. At the other end, these tones have to be Demodulated back to the digital signals for the computer, in other words the modem is an interface between the Computer and the Phone Lines.

Some modems are capable of performing various extra functions such as performing at different speeds, auto-dialling and auto-answering. Depending on the capabilities of the modem. The prices for a modem range from as little as \$70 up to several thousands of dollars. There are two different types of Modems, the Direct Connect Modem and the Acoustic Coupler. The direct connect modem connects directly to the phone line by a plug running from the modem that connects into the phone socket, just as the phone connects. An acoustic coupler however works by placing the phone handset into the acoustic coupler which is like a cradle. Of the two, direct connect modems are more popular as they work more reliably, although acoustic couplers are cheaper.

Many computers are produced with output ports for modems and other peripherals that are compatible with the industry standard, however the Commodore 64/128 is one that isn't. To make the Commodore conform to the standard (RS-232) you require an interface which plugs into the back of the computer (in the User Port), the modem is then connected to the interface via an RS-232 cable, a 25 pin wire cable. Some modems have been specially designed for the Commodore computers, and therefore don't require any interface, but instead plug straight into the User Port. While this is often an easier method, it means you cannot use the Modem on another type of computer, because no other computer has a User Port compatible with the Commodore's.

Once you have your modem all connected and ready, all you need is a terminal program. The terminal program is required for a number of reasons. Firstly it is required to direct data to the modem and receive data from the modem. The other use of a terminal program is to perform an ASCII conversion where necessary. Most computers conform to the industry standard for which bytes equal which characters (letters). Commodore however changed it around slightly, which means you cannot converse with other non-Commodore computers via

TELECOMPUTING with your COMMODORE

modem because when they send a certain character, the Commodore interprets it as a different character. This is where the terminal program comes into use. It takes the characters you send and converts them from CBM-ASCII to standard ASCII before sending them. When it receives characters, it converts them back to CBM-ASCII before trying to print them on the screen. Of course if you only wish to ring another Commodore, this conversion is not necessary. If you wish to download (receive programs over the phone) you need the terminal program to carry out the download as certain protocols are used to check that what you received was exactly what was sent. Such protocols include XMODEM which is not only confined to Commodore systems, but non-Commodore systems as well, Punter protocol, which is only used between Commodores, and Midterm which is another Commodore only protocol, there are other protocols around, but these are the most popular for the Commodore. The other task of the terminal program is to decide whether it has to print the characters you type on the screen, or wait until the characters you send, are sent back by the host computer. This is known commonly as Full Duplex and Half Duplex, Full Duplex being when the host computer sends back everything you type, and Half Duplex being when the host computer doesn't send your characters back, but your terminal program automatically echoes them to the screen. Although these terms are commonly used, they are not the true definitions of Half and Full Duplex. The true definitions refer to the Communications circuits, not the communications protocols, however most times the terms are used, they are referring to their newer meaning (the true meaning is of little use to a user, as it is all to do with how the data is sent down the lines).

As technology has advanced, so have the power of modems, mainly in the areas of speed. The most common speed used by a home computer user is 300 baud (baud mean bit per second. One character such as the letter 'a' is made up of eight of these bits).

However there are modems worth thousands of dollars achieving speeds of up to 19200 baud and possibly higher. Recently a newer speed has begun to increase in popularity due to the advent of VIATEL (Telecom's own Videotex System). Viatel runs at 1200/75 baud, meaning it sends to you at 1200 baud and you send to it and 75 baud. The 1200/75 baud protocol is known as CCITT V23, 300/300 baud is known as CCITT V21. CCITT V22 is 1200/1200, which, with cheaper modems now becoming available, will soon be the most popular among home users, already being very popular among business users.

Now that you have everything you need, hardware and software wise, there is only one more thing required.....phone numbers. There are all sorts of systems you can ring. If you have a computer at work connected to a modem, you could ring that from home (provided it is running at the right baud rate etc.). Or you could ring one of the Public Databases running, through which you can acquire information from the system's database, or use it as a link to ring other computers around the world. One such Database is OTC's Midas. You could ring Viatel, Telecom's own Videotex system running at 1200/75 baud. However more than likely, as a home user, you will probably ring what's known as a Bulletin Board System (BBS) or Public Access Message System (PAMS). These are usually run by an individual off a humble home computer such as a Commodore 64 or Apple. These systems are extremely popular and more and more are appearing around town all the time. A list of these systems is contained elsewhere in the magazine outlining the phone number, hours of operation and baud rates.

For those of you who have your modem and software and are all set to go, then find yourself the PAMS list, dial a number and have fun. For those of you who don't yet have a modem, and a wondering which modem you should get, then keep reading.

As mentioned before, modems can vary in price from as little as \$70 to in excess of a thousand dollars, depending on its capabilities.

TELECOMPUTING with your COMMODORE

When considering the various choices available you have to ask yourself three questions

- 1) 'What will I be using it for?'
- 2) 'How much do I want to spend?' and
- 3) 'Do I need Auto-dial and Auto-Answer?'

For the first question, if you decide that you are only interested in tinkering with a modem for entertainment reasons, ringing only the local BBS, then you only need a 300 baud modem.

If you want to access Viatel then you will need a 1200/75 modem.

If you want to access the local Bulletin Boards and Viatel as well then you will need a combination of both 300 baud and 1200/75 baud in the modem.

If you are perhaps looking at ringing the office computer which you know runs at

1200/1200 then you are going to need more powerful modem again, perhaps combining all three speeds. This however is going to be limited by your answer to the second question.

If you are only interested in spending around \$300 at the most then you could get yourself a 300, 1200/75 modem. At present, modems combining all three speeds are very expensive, although a huge price reduction seems on the cards soon.

Of course if you answered yes to the final question then you are adding a bit more to the cost, especially for Auto-Dial.

Next month we'll look at some of the modems you would be likely to consider in more detail, so you will have an idea of what's around. We've chosen a range of modems available for under a \$1000.

Phil Dean

BASIC WORKSHOP

In MARCH, we will be starting a new BASIC PROGRAMMING WORKSHOP.

Basic is a language with which we write programs for the computer. It is based on English words and most of you will already know some BASIC words, eg SAVE, LOAD, RUN and NEW. A lot of others are also very close to their English equivalents.

It is very easy to learn elementary basic programming and once having become familiar with the simpler aspects of it, it is not so difficult to go on to the more advanced areas of basic.

The course we are running is designed for RAW BEGINNERS in Basic or those who have started to learn but have not got too far, so you need not worry about not knowing what is going on. We will take the time to make sure you all understand. The course is

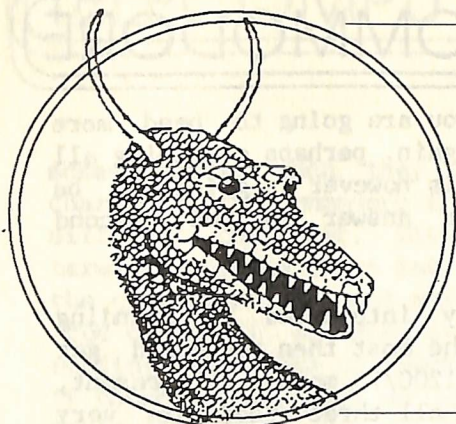
NOT for those who already know the basics of BASIC. We may run some advanced basic courses later in the year.

The course will be run on the basis of one night a week and will run for as long as people feel the need for it, finishing by the end of the year at the latest. The actual night will depend on what is suitable to most people.

The venue is at my house and thus numbers will be limited to 8 to 10 people. Those attending must be members of CHUG or SYDCOM. Preference will be for CHUG members if too many apply.

Those of you who are interested should contact me on (02) 487 1062, or come to the next club meeting and see me there.

Frank Bunton



MYTHS and LEGENDS

First off, a story about pirates. That particular class of person who will go to any length for the latest and greatest.

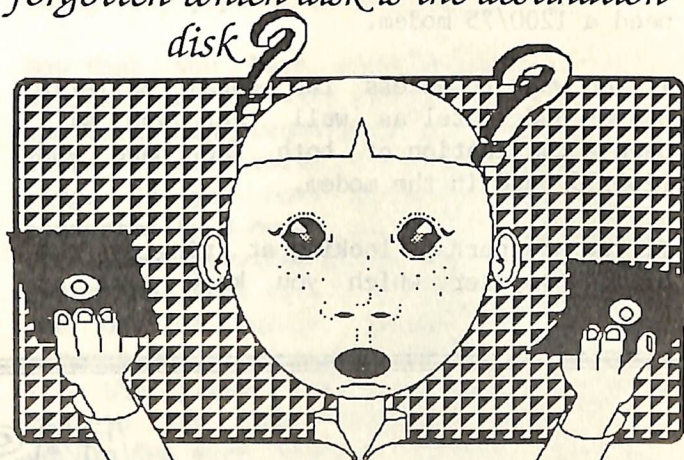
There was this User group over in the west who were pirates in the fullest sense of the word. One day they organized a full on Pirating session. They hired a hall and people rolled up with evil on their minds and Hack'em in their pockets. Soon the hall was filled to over flowing with little brown boxes and floppy black pieces of plastic. So the people over flowed and extension cords were run out to power boards, to which computers were attached, which were set up in the backs of cars, vans, trucks, etc.

It was getting late in the day but people kept coming. They started to daisy chain power boards. There was row upon row of beeping whirling vehicles linked together by copper life lines.

The system was perfect until people at the front of these chains finished their subversive activities and packed up to go home. One quick yank of the cord and not only were they free but so were the nine other people that were also attached to the power board.

It had been a copying extravaganza and as the sun set, the winners with smiles and the losers with half copied disks trudged home to discover what spoils they had accumulated.

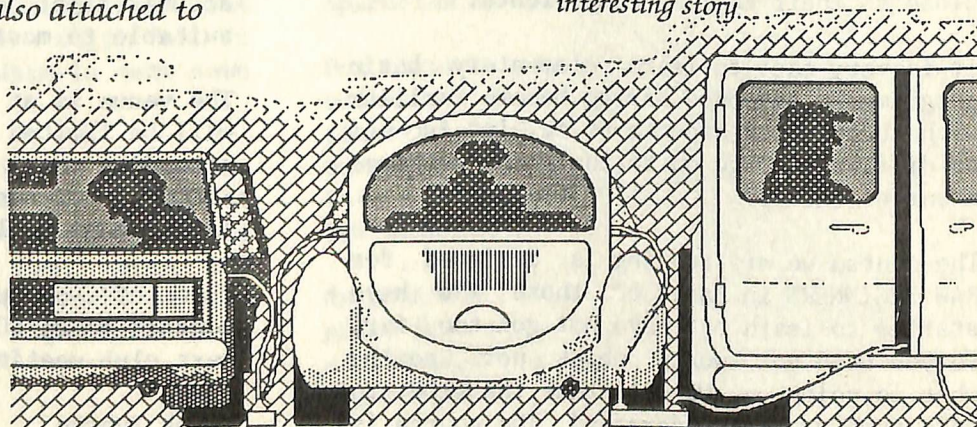
Have you ever been backing up a program and found that you've forgotten which disk is the destination disk?



Any myths, legends or short stories you have heard about Commodore and associated subjects, please drop a line to:

*Myths and Legends
P.O.Box 1578
Hornsby Northgate 2077*

There will be a \$30.00 prize for the most interesting story.



NATIONAL GEOGRAPHIC ON SUPERBASE

USING SUPERBASE FOR NATIONAL GEOGRAPHIC INDEX

With 7 years of National Geographic magazines on the shelf and no way of quickly being able to retrieve the information, I decided to do something about it. With Superbase loaded and book in hand, I started to make myself an index. I must say at the outset that the book is not the easiest to follow for someone who usually dives in feet first and only reads instructions as a last resort. SB takes the reader through a Tutorial session, setting up a database and learning how to select records, sort, find and output. Following the tutorial section is the Reference section, then the Programming section, then the Appendices! It can be tedious having to refer to three different parts of the book to find out how to do what you want.

Knowing virtually nothing I set out the fields for data:- Country, Article Title, Issue, Page No., State, City. When the format is set, you are asked 'Duplicate keys allowed?' In ignorance I answered 'yes' because obviously there was more than one article for some countries. This was a mistake which later had to be rectified. With duplicate keys in Country, a search for a particular country kept accessing the first record, even if there were 10. The answer provided by SB expert Rex Toomey was to reformat the entry field, add a numerical key field and import the old data. Rex gave me a routine that would automatically add an incrementing number to this field as the database was being reformatted. Having this field meant having to keep track of the key number for each subsequent article as it was entered, but the ease of producing sorted lists was worth the effort.

Once the data was entered (and that took a long time for 84 issues) I started experimenting with writing little SB basic programs to sort and output lists. The syntax is important — SORT all ON [field][field] TO "filename".

To print out a sorted list then you must OUTPUT FROM "filename" [field] [field] etc. Formatting of these fields takes a bit of mucking around to get them to fit nicely on the page. SB has a Report Writer built in which helps outputting, but you still have to experiment with spacing on the line etc.

All in all it was a worthwhile exercise as now the family has a printout of articles in order of countries, alphabetically sorted with the titles sorted within each country entry. For articles with no specific country I used 'General'. I will make a copy of the index available on disk for SB or printout for a small fee to those interested.

Paul Rodenhuis
(02) 449-9212

A NEW ERA IS DAWNING

Up till now getting something printed was time consuming and expensive.

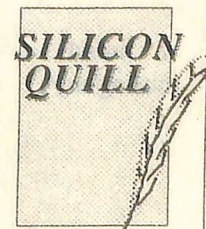
Delays would occur
(which are expensive)

Traditional draw-up methods would be used
(which are expensive)
and typesetting would be involved
(which is expensive)

This type of capital outlay would be a huge hinderance to the small business owner.
NOT ANY MORE. With the advent of laser printing the man in the street can get quality printing done at a fraction of the price of the traditional methods.

The Silicon Quill can design anything from Office Reports to Posters with outstanding quality at an inexpensive price.

Ring this number for a representative to call.
476 4391



SUPERCAT

If you are like everyone else, by now you would have bought a lot of software on disk. One problem you'll be having is trying to find a program in a hurry.

At last a good disk catalog system has arrived. It's called SUPERCAT.

Supercat will catalog up to 640 disk directories or 1280 with 2 drives.

It will index and put in alphabetical order over 5000 titles. 10000 with 2 drives

It will leave your disk directories as they are.

You can choose to write a number on each disk or not.

Automatic entry from disk directory with manual selection, edit and cross reference.

Print alphabetic index of all titles, directories of disks, disk labels and more.

Printer not required.

Search function defaults to the screen.

Search find any title in 10 seconds.

Sorts 1000 titles in 8 seconds.

Runs on Commodore C-64 or C-128 with one 1541 drive, two 1541 drives or dual drives.

I haven't used it with 2 drives yet but it certainly is very efficient with one drive. It is the best program for cataloging disks and is not very expensive.

I put all the even numbers on labels on the front of my data disks and all the odd numbers on the back.

I used a different hundred for each category.

e.g. 000 to 099	Games
100 to 199	Advent. Games
200 to 299	Utilities
300 to 399	Educational
400 to 499	Business
500 to 599	Music
600 to 640	Graphics

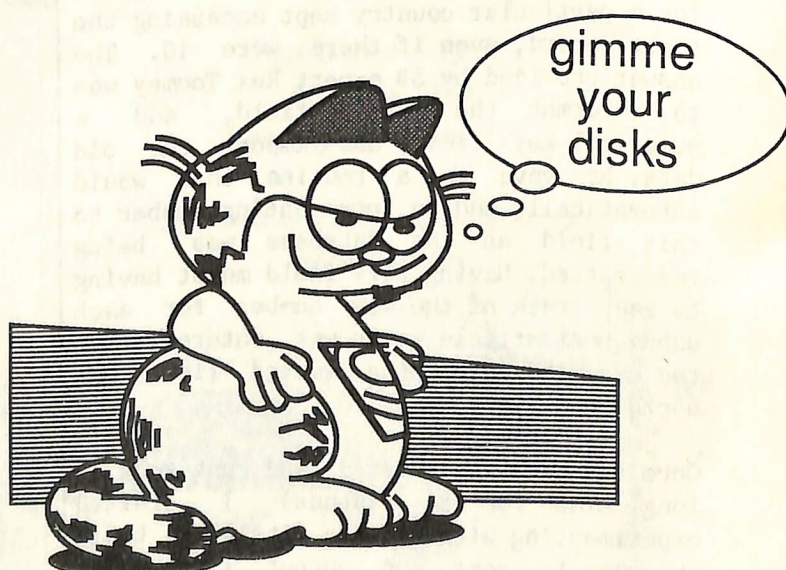
Overall I think it beats writing every directory down. One problem I found is that it won't let you catalog the Supercat disk itself.

When you purchase it prepare two disks. One for the Master Directory and one to put the Catsort on.

I don't think you can go wrong as the menus are pretty user friendly.

Although Disk Filer version 1 lets you catalog 2000 disks, I think Supercat leaves it for dead.

Armando Amato



SYDCOM LIBRARY LIST

PUBLICATION TITLE	MAG. NO.	MONTH	YEAR
Australian Electronics monthly	22	JUL	86
Australian Commodore Review	88	JUN	84
Australian Commodore Review	89	DEC	85
Australian Commodore Review	109	FEB	86
Australian Commodore Review	110	SEP	86
Australian Commodore Review	116	NOV	86
Australian Commodore Review	117	NOV	86
Australian Commodore Review	118	OCT	86
Australian Micro	47	MAR	84
Australian Micro	99		
Australian Micro	100	MAR	84
Australian Personal Computer	13	MAR	86
Australian Personal Computer	16	NOV	83
Australian Personal Computer	17	AUG	83
Australian Personal Computer	18	JUN	83
Australian Personal Computer	19	310	83
Australian Personal Computer	20	402	83
Australian Personal Computer	101	FEB	85
Australian Personal Computer	102	APR	84
Commodore Computing International	10	APR	84
Commodore Computing International	11	MAY	84
Commodore Computing International	12	JUN	84
Commodore Computing International	48	APR	84
Commodore Computing International	96	MAY	84
Commodore Horizons	51	JUL	85
Commodore Horizons	52	JUN	85
Commodore Horizons	53	AUG	85
Commodore Horizons	54	SEP	85
Commodore Horizons	55	JAN	85
Commodore Horizons	56	FEB	85
Commodore Horizons	57	MAR	85
Commodore Horizons	58	APR	85
Commodore Horizons	59	MAY	85
Commodore Horizons	60	NOV	84
Commodore Horizons	61	DEC	85
Commodore Horizons	62	JAN	86
Commodore Horizons	63	NOV	85
Commodore Horizons	64	MAR	86
Commodore Horizons	65	MAY	84
Commodore Magazine	45	301	83
Commodore Magazine	86	601	
Commodore Magazine	87	503	
Commodore Micro Computers	49	FEB	85
Commodore Powerplay	50	MAY	85
Commodore User	93	AUG	85
Commodore User	94	MAY	86
Commodore User	95	MAY	84
Commodore User	111	DEC	84
Compute!	21	JUN	83
Compute!	82	NOV	84
Compute!	83	AUG	84
Compute!	84	JUN	83
Compute!	85	OCT	83
Compute!	108	JUN	83
Compute!'s Gazette	40	APR	86

Compute!'s Gazette	41	FEB	85
Compute!'s Gazette	42	NOV	84
Compute!'s Gazette	90	MAR	84
Compute!'s Gazette	91	AUG	84
Compute!'s Gazette	92	FEB	84
Creative Computing	39	AUG	82
Electronics Today	23	JUL	86
Electronics Today	105	AUG	84
Home Computer Gem	106	SEP	86
Home Computer Gem	119	SEP	86
PC Games	1	AUG	84
PC Games	2	SEP	84
PC Games	3	OCT	84
PC Games	4	NOV	84
PC Games	5	DEC	84
PC World	46	APR	84
Peripheral	24	MAY	86
Peripheral	25	MAY	86
Peripheral	79	MAR	85
Peripheral	80	SEP	85
Peripheral	81	JUL	84
Peripheral	107	SEP	86
Personal Computer Games	6	JAN	85
Personal Computer Games	7	FEB	85
Personal Computer Games	8	MAR	85
Personal computer Games	9	MAY	85
Personal Computer Games	35	APR	85
Personal Computer Games	36	FEB	85
Personal Computer Games	37	MAY	85
Personal Computer Games	38	OCT	85
Personal Computing	112	OCT	83
Popular Computing	98	MAY	84
Run	34	FEB	85
Run	66	APR	86
Run	67	MAY	86
Run	68	FEB	86
Run	69	OCT	85
Run	70	DEC	85
Run	71	MAR	86
Run	72	JAN	86
Run	73	SEP	85
Run	77	NOV	84
Run	78	JUN	86
Run	113	JUL	86
Run	114	SEP	86
Run	115	OCT	86
Your Commodore	15	JAN	85
Your Commodore	43	FEB	85
Your Commodore	44	DEC	84
Your Commodore	97	JUL	85
Your Computer	14	APR	86
Your Computer	103	MAY	84
Your Computer	104	APR	84
Your 64	26	NOV	84
Your 64	27	JAN	85
Your 64	28	FEB	85
Your 64	29	MAR	85
Your 64	30	APR	85
Your 64	31	JUN	85
Your 64	32	AUG	85
Your 64	33	SEP	85
Your 64	74	OCT	85

CLONING

column

This is the section where we attempt to solve the problems being experienced by our readers or club members. If you want us to look at any particular aspect of basic programming then drop a line to the Editor.

TRUE OR FALSE

Dear Basic Banter,

The other day I came across a bit of programming that read:-

```
1040 A = X = 1 : B = Z = 3
```

I cannot make sense out of the double equals. What is its purpose?. J.G.

Dear J.G.

This had me confused, too, when I first came across it. To understand it we have to look at the truth or falsehood of expressions. Every expression such as the following can be evaluated as being true or false:-

```
A = 1      BC > DE      B$ = "YES"
X < 10     Y => -9      C$ <> "NAME"
```

If the expression is true, it has a "value" of -1. If the expression is false, it has a "value" of 0. You can test this out by entering into the computer, in direct mode, each of the following:-

```
PRINT 1 = 2 [return]
PRINT 1 = 1 [return]
PRINT 1 < 2 [return]
PRINT 1 > 2 [return]
```

```
A$ = "YES" : PRINT A$ = "YES" [return]
A$ = "YES" : PRINT A$ = "NO" [return]
A$ = "NO" : PRINT A$ <> "YES" [return]
A$ = "NO" : PRINT A$ = "YES" [return]
A$ = "NO" : PRINT A$ <> "NO" [return]
```

For each of the true expressions, you will have -1 printed to screen and for each of the false ones, 0 will be printed.

To get back to the original question, an expression such as "A = X = 1" will first look at the "X = 1" part.

If X does equal 1, "X=1" is true and A will be given a value of -1. If X is not equal to 1, "X=1" will be false and A will be given a value of 0. Try this out by entering each of the following into the computer in direct mode:-

```
X = 1 : A = X = 1 : PRINT A [return]
X = 2 : A = X = 1 : PRINT A [return]
```

In the first case you will have -1 printed to screen, and in the second case, 0 will be printed.

So how can this principal be put to use in practice? One instance is where you have a whole series of statements such as:-

```
100 IF A = 1 THEN X = 5
110 IF A = 7 THEN X = -1
120 IF A = -2 THEN X = -7
130 IF A = 11 THEN X = 12
140 IF A = -5 THEN X = 2
150 IF A = 16 THEN X = 0
160 IF A = 0 THEN X = -3
```

There is no formula that could be used to transform X into A as there is no mathematical logic behind the X and A values. However, using the True or False method, all these statements could be replaced by the one program line as follows:-

```
200 X=-5*(A=1)+1*(A=7)+7*(A=-2)-12*(A=
11)-2*(A=-5)-0*(A=16)+3*(A=0)
```

This line is a saving of 31 bytes over the previous 7 lines.

Looking at this line, if A = 1, then "A=1" is true and has a "value" of -1. The expression "-5*(A=1)" then becomes "-5*-1", ie 5, which is the value for X we wanted when A=1 as per the original line 100.. All the other "A=?" expressions are false and thus have a "value" of 0. Each of the multiplications will be zero as anything multiplied by zero is zero. Thus the full expression is 5 + 0 = 5. You can follow the same logic for every value of A. Test this out by entering into computer memory line 200 (above) together with the following lines:-

CLONES

column

```
100 INPUT "ENTER A VALUE FOR A"; A
300 PRINT "A = " A : PRINT "X = " X
400 GOTO 100
```

You can now enter any value for A you like and see the value calculated for X. Note that if a value for A other than the 7 nominated values is entered, X is given a value of 0. For this reason, you could delete from line 200 the part that is the equivalent of the original line 150, ie $-0*(A=16)$. This would save another 9 bytes.

One problem with this is that, although the True or False method takes up less computer memory, its execution time in the above example is slower. The IF...THEN statements in lines 100 to 160 are about 31% faster than line 200. If the method is used only occasionally, the time difference will not be noticable as line 200 takes only 0.0415 of a second to execute. A program using the True or False method a large number of times, however, may start to show somewhat slower operating times. You will need to decide whether you want to conserve memory or speed up your program.

Another use I have put the True or False concept to can be illustrated by the following bit of program:-

```
100 IF A = 0 THEN B = 10
110 IF A = 1 THEN B = 15
120 FOR R = B TO 20 : PRINT R : NEXT
```

If the variable B is only used as the start of the FOR...TO...NEXT sequence, then these three lines can be replaced with:-

```
100 FOR R = 10 - 5*(A=1) TO 20 : PRINT
R : NEXT
```

This does the same job with a saving of 19 bytes.

This time, the True or False method is not only shorter, but is faster, than the IF...THEN method. However, the speed difference is insignificant at 0.61%

If the value of B is used elsewhere, and is not just the start of the FOR...TO...NEXT sequence, you would need to use the

following, which still has a saving of 15 bytes over the original:-

```
100 B = 10 - 5*(A=1) : FOR R = B TO 20
: PRINT R : NEXT
```

You will need to keep in mind that any value of A other than 1 will give the same result as A=0.

As you become more familiar with the True or False concept, you will find more and more ways of using it to shorten your programs.

TIMING PROGRAM EXECUTION

I mentioned above the times taken for a program line or lines to be executed. If program speed is a problem, you can time various methods of doing the same thing using the C64's Jiffy Clock. The reserved variable TI keeps track of how much time has elapsed in jiffies since the computer was turned on or the reset switch was hit (if a reset switch is fitted). A jiffy is one sixtieth of a second. Suppose that we wanted to time the execution of line 200 that we used above. We would NEW the computer memory then enter the following:-

```
100 Y = TI : FOR Q = 1 TO 100
200 X = -5*(A=1)+1*(A=7)+7*(A=-2)-12*(A
=11)-2*(A=-5)-0*(A=16)+3*(A=0)
300 NEXT Q : Z = TI : T = (Z-Y)/100
400 PRINT "EXECUTION TIME IS" T "JIFFIES"
```

Line 100 records the jiffy time in the variable Y before the program starts, then sets up a loop to cause line 200 to be executed 100 times. Line 300 concludes the loop, records the jiffy time, in variable Z, at the end of execution, then calculates the time T in jiffies. We divide by 100 to get the time of one execution. Line 400 then prints out the result. If you want the time in seconds, divide the jiffies by 60. It would be inaccurate to time only one execution of the line in question. The value 100 for the loop can be varied depending on the speed of execution.

CLONE

column

A PROBLEM WITH SPACES IN PROGRAMS

You may have noticed that I leave a lot of spaces in the program listings in these articles. These are there purely to make them more readable. In nearly all cases it does not matter whether there is a space between items in a program line or not. For instance, one of the lines I used above:-

```
300 PRINT "A = " A : PRINT "X = " X
```

could be written:-

```
300 PRINT"A ="A:PRINT"X ="X
```

The spaces within quotes in a print statement are, of course, significant and are printed out as spaces. All other spaces serve no purpose other than clarity in

printing. Each space, however, takes up 1 byte of memory, so, to conserve computer memory, they are best left out in large programs.

There is one instance where a space between items does cause a problem. Try both these lines separately:-

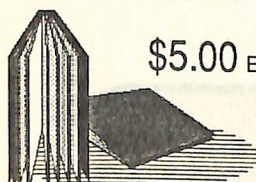
```
100 INPUT "ENTER A NUMBER" ; N
```

```
100 INPUT "ENTER A NUMBER"; N
```

You must ensure that there is never a space between the end of a quote after INPUT and the semicolon. Such a space will result in a syntax error (It does in my C64, anyway. I would be interested to hear from anyone who tries this and does not get a Syntax Error).



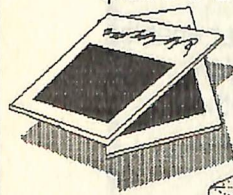
PLASTIC FOLDERS FOR
YOUR COPIES OF
PERIPHERAL. KEEPS
YOUR MAGAZINES
CLEAN AND TIDY.



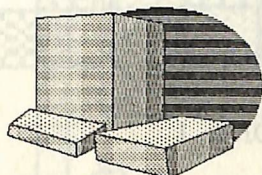
\$5.00 EACH

COMMODORE REVIEWS

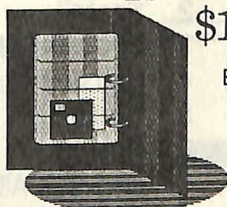
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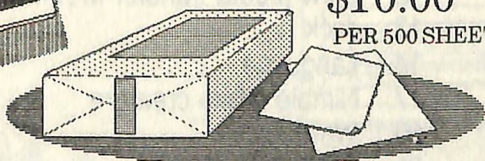
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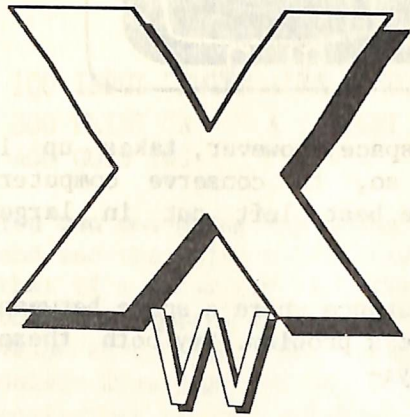
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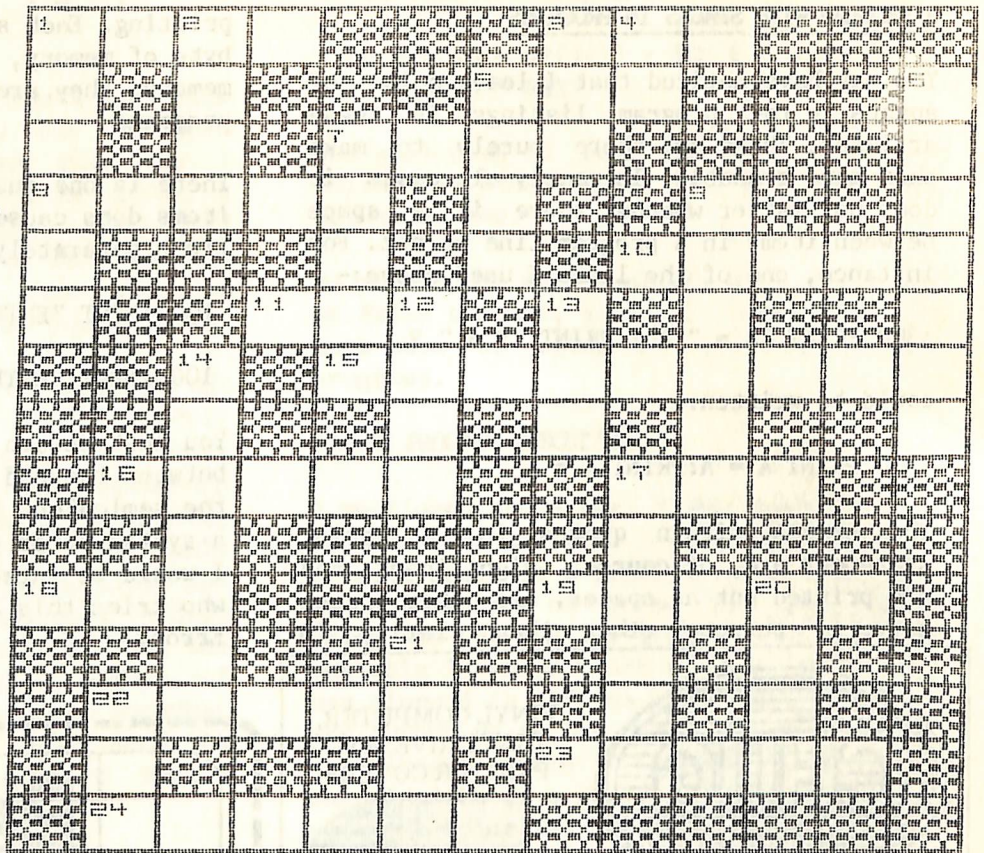
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WORD



X-WORD 1

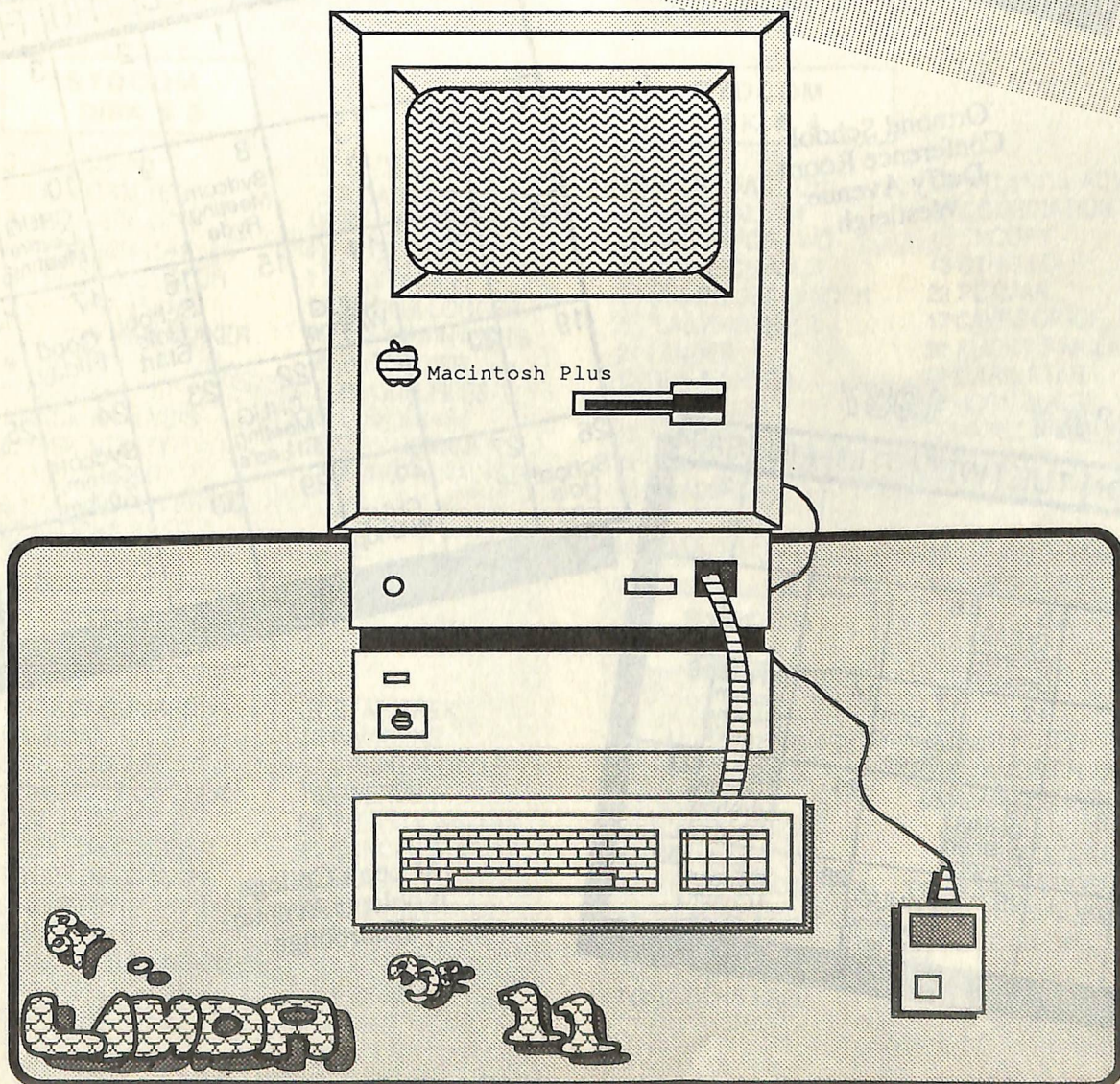
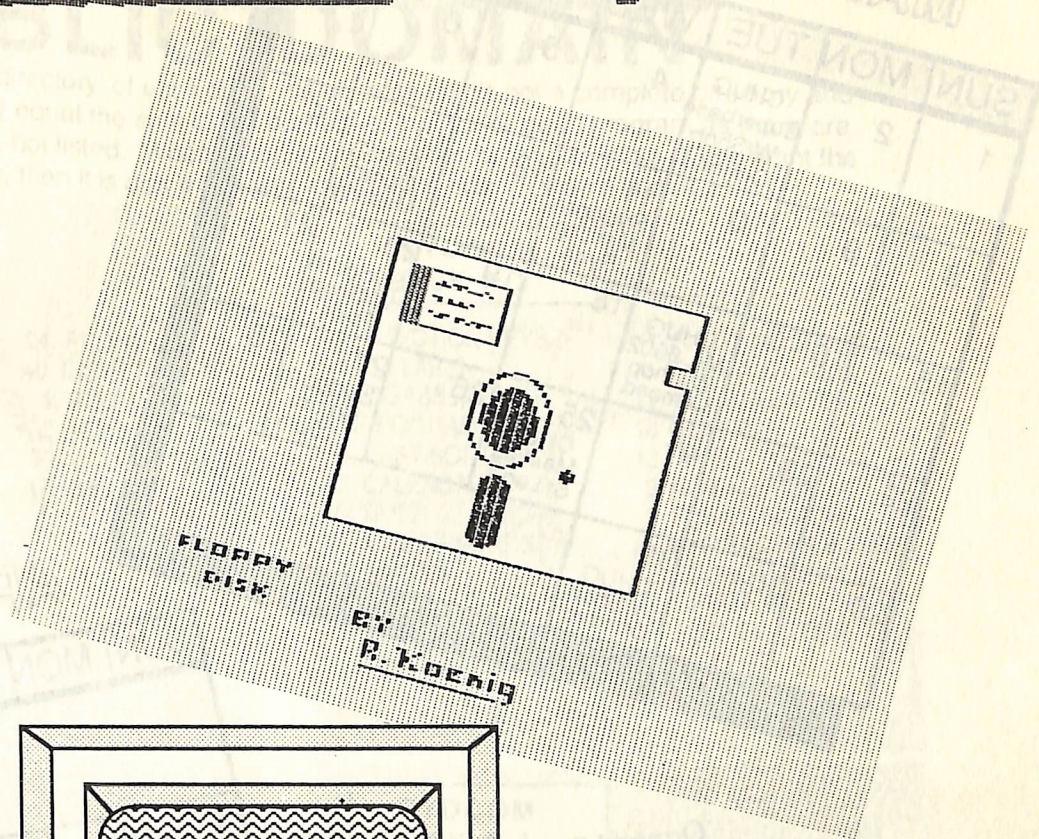
ACROSS CLUES

1. Sequence of bits
3. Commodore magazine title
5. Disk Operating System (abbr)
7. Edge
8. Greek Letter
10. Used in medicine and varnishes
11. Smallest possible unit of information
15. Directory
16. 1541
17. System call
18. Token #129
19. ASCII #30
22. String oriented symbolic language
23. Fighting fish
24. Device #3

DOWN CLUES

1. Composed of two
2. Snare
3. Read Only Memory
4. You and me
5. It's floppy
6. An 803
7. Beginner All purpose Symbolic Instruction Code
9. Part of the computer that enables it to store your information
12. Slow media transfer method
13. Jack
14. Language
17. Nimble elflike creature
20. Way out
21. To prod
22. Distress Signal

Picture Gallery



MARCH 1987

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	CHUG Superbase W/Shop Ormond	4	5	6	7
8	9	10	11 Sydcom Meeting Ryde	12	13 CHUG Comm Meeting	14
15	16	CHUG M/L 6502 W/Shop Ormond	18	19	20 Sydcom W/Shop Ryde	21
22	23	24	25 CHUG Meeting St Leo's	26	27 Sydcom Comm. 7.00pm	28
29	30	31 CHUG W/Shop Ormond				

Ryde Catering College
Blaxland Road
Ryde

Ormond School
Conference Room
Duffy Avenue
Westleigh

APRIL 1987

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8 Sydcom Meeting Ryde	9	10 CHUG Comm Meeting	11 Sydco W/Sho Ryde
12	13	14 CHUG W/Shop	15	16 School Hols Start	17 Good Friday	18
19	20	21	22 CHUG Meeting St Leo's	23	24 Sydcom Comm. 7.00pm	25
26 School Hols End	27	28 CHUG W/Shop	29	30		

St Leo's College
Woolcott Avenue
Wahroonga

MAY 1987

SUN	MON	TUE	WED	THU	FRI	SAT
31					1	2
3	4	5 CHUG W/Shop Ormond	6	7	8	9
10	11	12	13 Sydcom Meeting Ryde	14	15 CHUG Comm Meeting Frank's	16
17	18	19 CHUG W/Shop Ormond	20	21	22 Sydcom W/Shop Ryde	23
24	25	26	27 CHUG Meeting St Leo's	28	29 Sydcom Comm. Ryde	30

LIBRARY

PUBLIC DOMAIN

This list gives you a 'directory' of each disk. Please note this is not a complete directory and the blocks free do not equal the sum of the number of blocks for each program as there are other files on the disk not listed. When ordering disks, order by its disk #, so if you want the terminal program disk, then it is disk #1. If you want maths disk #5 then it is disk #14.

SYDCOM DISK # 1

66. SUPERCOM XL.V1	24. FRONT 64
47. YAM	40. DISK TERM
11. 64 TERM	4. RTERM V2
23. PLUS TERM	32. TERM 64
46. MIDWESTERN	50. ULTRATERM V4
73. SECONDTERM	17. XMODEM.C

105 BLOCKS FREE

SYDCOM DISK # 2

4 FUNCTION KEYS	11 SUPERMON64
4 64 LABEL	6 TAPE AUTORUN
20 DISASSEMBLER	17 PET EMULATOR
13 PROGRAM LISTER	18 SIDMON
3 FAST SORTER	13 ARTIST
6 CALENDAR	9 MOVING SIGN
10 TIMER	3 SPRITE EDITOR
34 CROSSWORDS	32 CHARACTER EDITOR
8 MARKS	10 SOUND/RING MOD
18 METRIC CONVERS64	42 SPRITE EDITOR
12 UTILITY MENU	7 SCREEN CLOCK
9 BAR GRAPH	12 GRAPH IT

172 BLOCKS FREE

SYDCOM DISK # 3

6. FILE COPY	5. SEQ LISTER
9. PERFORM TEST	3. LOAD ADDRESS
5. LOCK-UNLOCK	15. SINGLE FILECOPY
15. RECOVER 1541	11. FAST COPY
16. TRACK & SECTOR	11. COPY/64.V1
3. CHANGE 1541	10. 64 DISK LOGGER
15. TURBO MENU MAKER	31. DISK PRINTOUTS
8. DIR-C64	8. DISK TIDIER
10. DISK ZAP	6. DELETE FILES
2. DISK ANALYSIS	36. DISK ERASE
18. DISK UTILITY	8. DISK RENAMER
11. AUTO-LOAD	7. ERROR ANALYSER
5. COCKROACH ERROR	

327 BLOCKS FREE

SYDCOM DISK # 4

13 3D TIC TAC TOE	53 ATLANTIS ADVEN'R
26 BASEBALL 64	26 COMBINATION WARS
10 CHESS FOR TWO	19 SNOOPY
10 CONNECT FOUR	13 OTHELLO
24 JUMBO JET LANDER	22 PETMAN
55 LABYRINTH (J)	17 CAVES OF ICE
21 LANDER	20 FLIGHT SIMULATOR
12 GUN FIGHTER	22 DARK STAR
29 HANGMAN	10 MOON BUGGY
12 ARROW	10 MAZE CRAZE
21 LEMONADE STAND	11 NORTH SEA COPTER
8 ROADER64	

146 BLOCKS FREE

SYDCOM DISK # 5

23 CRAZY CLIMBER	31 STAR TREK
18 U-BOAT	13 INVADERS
18 TRENCHFIRE	17 CHICKEN LITTLE
25 CANYONS OF ZELAZ	18 SWERVE
21 OIL TYCOON	56 THIRSTY NELLAN
18 CANYON CRUISER	21 CONCENTRATION
13 BOWLING CHAMP	20 BLACK BOX
15 NEVETS	55 LABYRINTH (J)
7 GOBLIN	91 DR LIVING
27 HAUNTED MANSION	

112 BLOCKS FREE

SYDCOM DISK # 6

19. ACCOUNTING TEST	3. ANNUITY
76. ACCOUNTING	39. AMORT'N TABLE
33. BONDS	38. CALENDAR
39. CREDIT UNION	32. FIFO
43. MARKET	45. PORTFOLIO
22. PROP. EVALUATION	11. C/S RETIREMENT
14. INTEREST RATE	16. BUILDING COSTS
9. FINANCE	15. LOAN CALC

148 BLOCKS FREE

LIBRARY

PUBLIC DOMAIN

SYDCOM DISK # 7

- | | |
|----------------------|---------------------|
| 1. DISK COMMANDS | 2. FEATURES QUIZ |
| 3. SIMULATION | 4. GRAPHICS SUB. |
| 5. HEX → DEC | 6. HEX DEMO |
| 7. HISTORY QUIZ | 8. HYPO. AUTO |
| 9. PRINT SORT | 10. STRINGS |
| 11. TURTLE | 12. RANDOM NO. DEMO |
| 13. COMPUTER CONCEPT | |

86 BLOCKS FREE

SYDCOM DISK # 8

- | | |
|---------------------|----------------------|
| 43 CAPITALS.C3 | 55 KOPPEN.C3 |
| 48 CO-ORD DIST.C3 | 36 MILEAGE.C3 |
| 78 GEOG TEST.C3 | 45 STATES & CAP.C3 |
| 34 FRENCH TOPICS.C3 | 39 STATES & REG.C3 |
| 50 GEOGRAPHY.C3 | 47 WORLD CAPITALS.C3 |
| 43 ITALIAN QUIZ.C3 | 56 MAP OF ENGLAND |

15 BLOCKS FREE

SYDCOM DISK # 9

- | | |
|---------------------|---------------------|
| 34 DATES.C2 | 37 FRENCH TEST.C2 |
| 37 FR. SENTENCES.C2 | 46 FRENCH VERBS.C2 |
| 54 FRENCH AID #1.C2 | 36 FRENCH VERBS .C2 |
| 53 FRENCH AID #2.C2 | 35 MELI-MELO.C2 |
| 37 FRENCH DRILL.C2 | 47 SERIE 1.C2 |
| 97 FRENCH FWC.C2 | 34 SCHOOL-MARM.C2 |
| 43 FRENCH QUIZ.C2 | |

55 BLOCKS FREE

SYDCOM DISK # 10

- | | |
|---------------------|---------------------|
| 52 ADD & SUBS.C3 | 67 AGENT BLOTTO.C3 |
| 47 B.T.C. ADD.C3 | 50 ALG.VECTORS.C3 |
| 42 B.T.C. DECIML.C3 | 39 AMORT'N TABLE.C3 |
| 34 ADD DRILL.C3 | 36 ANALYSIS 1.C3 |
| 33 ADDITION RACE.C3 | 40 ANKOVZ.C3 |
| 55 ADDS AND SUBS.C3 | 34 ANOVA.C3 |
| 53 AUTO ADD TCHR.C3 | 43 ARTILLERY.C3 |

25 BLOCKS FREE

SYDCOM DISK # 11

- | | |
|---------------------|---------------------|
| 42 B.T.C. DIVIDE.C3 | 30 BEADS IN A JA.C3 |
| 44 B.T.C. FRAC.C3 | 44 BOMB ADD.C3 |
| 41 B.T.C. MULT.C3 | 33 BONDS.C3 |
| 47 B.T.C. PERCNT.C3 | 50 BRAIN CRANE X.C3 |
| 35 BAIRSTOW NTH.C3 | 48 BRAIN CRANE +.C3 |
| 40 BIGTIME.C3 | 48 BRAIN CRANE -.C3 |
| 46 BALANCE.C3 | 50 BRAIN CRANE /.C3 |
| 31 BASE CHANGE.C3 | |

25 BLOCKS FREE.

SYDCOM DISK # 12

- | | |
|---------------------|---------------------|
| 36 ELLIPSE-TRANS.C3 | 34 DATES.C3 |
| 31 CHOICES.C3 | 29 DEPRECIATION.C3 |
| 53 CLOCK.C3 | 55 DECOMPOSITION.C3 |
| 43 COUNT 1 TO 10.C3 | 39 DERIV POLY.C3 |
| 45 COUNT TEN.C3 | 50 DICE THROW.C3 |
| 48 COUNT FIVE.C3 | 41 DRILL S1.C3 |
| 44 DART.C3 | 39 DRILL.C3 |
| | 35 DRILLS.C3 |

42 BLOCKS FREE

LIBRARY

PUBLIC DOMAIN

SYDCOM DISK # 13

42 HANGMATH.C3	40 FAST MATH.C3
52 EQN MANIPULAT.C3	56 FUN MACHINE.C3
44 EQUATIONS 1.C3	47 HANGMATH WORD.C3
56 EQUATIONS 2.C3	27 HEXDEC.C3
41 EXPONENT MULT.C3	53 HI-CALC.C3
41 FACTOR TRINOM.C3	29 HOW LONG.C3
49 FACTOR WHOLES.C3	
35 FACTORS.C3	

15 BLOCKS FREE

SYDCOM DISK # 14

55 INTEGERS.C3	43 LIMITS.C3
34 INTEGER ADD.C3	39 LINEAR EQUA.C3
28 INTEGER LINES.C3	53 MATH QUIZ.C3
72 INTEGRATION.C3	28 MAKING CHANGE.C3
35 LADDER MULT.C3	45 MATH DICE.C3
31 LAST BOTTLE.C3	45 MATH DRILL.C3
35 LAZER MATH.C3	64 MATHPACK.C3
34 LIMIT CIRCLE.C3	

12 BLOCKS FREE

SYDCOM DISK # 15

55 POINTS.C3	45 MORTGAGE.C3
58 MATRIX.C3	41 NUMBER GUESS.C3
50 METER READING.C3	25 PERCENT.C3
41 METRIC (ECCO).C3	45 PIZZA.C3
41 METRIC.C3	42 PLANES.C3
50 MICROMATH +-.C3	40 POLICE SUBT.C3
36 MIXED NUMBERS.C3	31 POWER-FACT.C3
41 MONOMIAL MULT.C3	

3 BLOCKS FREE

SYDCOM DISK # 16

31 RESULTANTS.C3	43 ROOT FINDER.C3
29 PRIME-FACT.C3	41 ROOTS QUIZ.C3
31 PRIME NUMBER.C3	71 SAUCER MULT.C2
35 PROBABILITY.C3	40 SIG-DIGITS.C3
38 QUIZ ADD.C3	29 SIGNIFCNT DIG.C3
38 QUIZ MULT.C3	42 SIMPLE SUBST.C3
53 SHAPES.C3	33 SKIER.C3
40 ROLLS TIL ONE.C3	39 SLOPE AND INT.C3

22 BLOCKS FREE

SYDCOM DISK # 17

40 TIC TAC C64	38 TIMES
46 SLOPE/INTERACT	36 TRIANGLES
45 SMALL MATH	38 TRINOMIAL FAC
63 SNOOPY	66 VECTOR
48 STATISTICS	48 ZERO IN
38 TIMES TABLE	

142 BLOCKS FREE

All disks are \$5.00 each and are obtainable from the SYDCOM meetings.

We hope these disks are fully error free, however if you do find an error in any of the programs, please let us know so we can make the necessary adjustments.

Philip Dean
Public Domain Shop

SYDCOM
DISK



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